

NOMINATION OF DHARMENDRA K. SHARMA TO
BE ADMINISTRATOR OF THE RESEARCH AND
SPECIAL PROGRAMS ADMINISTRATION, U.S. DE-
PARTMENT OF TRANSPORTATION

Y 4. C 73/7: S. HRG. 103-649

Nomination of Dharmendra K. Sharma...

HEARING

BEFORE THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

JUNE 14, 1994

Printed for the use of the Committee on Commerce, Science, and Transportation



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**NOMINATION OF DHARMENDRA K. SHARMA
TO BE ADMINISTRATOR OF THE RESEARCH
AND SPECIAL PROGRAMS ADMINISTRATION,
U.S. DEPARTMENT OF TRANSPORTATION**

TUESDAY, JUNE 14, 1994

**U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.**

The committee met, pursuant to notice, at 2:35 p.m., in room SR-253 of the Russell Senate Office Building, Hon. J. James Exon, presiding.

Staff members assigned to this hearing: Clyde J. Hart, Jr., senior counsel, and Rebecca A. Kojm, professional staff member; and Emily J. Gallop, minority professional staff member.

OPENING STATEMENT OF SENATOR EXON

Senator EXON. The committee please will come to order.

I am pleased to call the Senate Commerce, Science, and Transportation Committee to order today. We have two major items on our agenda. It is going to be complicated somewhat by a series of votes. The first vote I expect to be about 3 o'clock. So, we will try to work around that.

Our first order of business is the nomination of Dr. Sharma for the position of Administrator of the Research and Special Programs Administration, RSPA, of the U.S. Department of Transportation. Although it is a small agency, RSPA is one of the Department of Transportation's most important Departments. This agency deals with the most technical, sensitive, and dangerous issues in modern transportation. The agency's work, especially in the area of pipeline safety and hazardous materials to which this committee has devoted a great deal of time, has life or death consequences for the public.

Dr. Sharma is a distinguished scientist and engineer. He has authored and coauthored more than 40 papers on subjects such as powerplant motors, electric generators, and superconductivity. None of them, I suspect, will be the subject of any controversy.

Dr. Sharma, we welcome you to the committee today. Your full statement will be included in the record as if read, and you may summarize it after you are introduced by the very distinguished Member of the House of Representatives, who I am pleased to see here representing you today for introduction purposes. I assure you that anything that the Congressman has to say will not necessarily be held against you in these hearings. [Laughter.]

Norm Mineta, we welcome you. We have had a great working relationship with you and your subcommittee over there and mine here. I am delighted that you are here today. I recognize you at this time.

**STATEMENT OF HON. NORMAN Y. MINETA, U.S.
REPRESENTATIVE FROM CALIFORNIA**

Mr. MINETA. Thank you very much, Senator Exon.

Mr. Chairman, I really am very honored to have this opportunity to support the President's nominee, Dr. Dharmendra K. "Dave" Sharma, to head the U.S. Department of Transportation's Research and Special Programs Administration.

I would like to begin by sharing with the members of the committee the importance of this particular nomination. Many of you will recall that on October 24, 1992, the Congress passed the Pipeline Safety Act of 1992. This legislation established within the Department of Transportation a Research and Special Programs Administration. It also allowed for the administration to be headed by an administrator appointed by the President and confirmed by the Senate.

The Research and Special Programs Administration, RSPA, as we know it, has a crucial role to play in the development of transportation policy, including safety and technology research and transfer. RSPA has jurisdiction over the transportation of more than 500,000 shipments of hazardous materials every day—everything from drycleaning fluid to rocket fuel.

Its jurisdiction also includes a network of 1.7 million miles of pipeline carrying crude oil, petroleum products, and natural gas. RSPA is tasked with coordinating the Department's research, technology innovation, aviation information, and transportation management activities. And it operates the Volpe National Transportation System Center in Cambridge, MA, and the Transportation Safety Institute in Oklahoma City, OK.

The nomination by President Clinton of Dr. Dharmendra K. "Dave" Sharma to be Administrator of RSPA is an excellent choice. Dr. Sharma is a man of special talents and accomplishments, some of which I would now like to highlight.

First, however, it is important to note that he lived in south San Jose for 9 years, from 1977 to 1986, and that he taught at San Jose State University, which, as many of you are aware, is located in my congressional district. This should further confirm that his credentials in the area of science and technology and public policy are impeccable.

Dr. Sharma has more than 30 years of professional experience in the energy, science, and technology arena. He has authored more than 40 technical papers on various subject matters. He came to Washington, DC, from the Electric Power Research Institute, EPRI, in Palo Alto, CA, where he directed energy-related research projects.

His previous experience includes working for more than 12 years with the General Electric Co. in my district, in San Jose, CA, as well as New York and Massachusetts, and for Heavy Electricals Ltd. in Bhopal, India. At each of these companies he has worked

on design, development, and project management in the area of electric power generation, transmission, and distribution systems.

I was one of the primary movers in the creation of RSPA, the Research and Special Programs Administration. And frankly I am thrilled that a former constituent of mine and a very competent individual will head this agency. He understands the vision of RSPA as it was intended by that legislation.

So, today, as Chair of the House Committee on Public Works and Transportation, Dave has my complete support. I know that you will enjoy working with him, as well, Mr. Chairman. So, it is my pleasure to, at this point, introduce to you Dr. Dave Sharma.

Thank you very much, Mr. Chairman.

Senator EXON. Norman, thank you very much. I know you have a busy schedule and it takes time to get over here. We very much appreciate your fine statement in support of the nominee.

Before I recognize the nominee, I want to turn now to my distinguished colleague from the State of Hawaii, Senator Akaka, for any remarks that he cares to make.

STATEMENT OF HON. DANIEL K. AKAKA, U.S. SENATOR FROM HAWAII

Senator AKAKA. Thank you very much, Mr. Chairman. I do have some personal comments to make.

I want to welcome my colleague, Representative Mineta from the House, to the Senate. It is good to have you here.

I am here, Mr. Chairman, to tell you a little bit about Dr. Dharmendra K. Sharma—we call him Dave—President Clinton's nominee as the Administrator of the Research and Special Programs Administration under the Department of Transportation.

Millie and I have known Dr. Sharma and Santosh for many years—since they have arrived in Washington, DC. And we have been close friends. That is the reason I am here.

His background was mentioned—30 years of technical and professional experience in the field. But he was also an educator in San Jose, and a member of the department of education, and had served well there. I mention that in particular because he has been in touch with people, and that is a quality that will be valuable to the Department of Transportation well as the Administrator.

His diverse experience will help Secretary Peña's agenda and also that of President Clinton as they examine the transportation research and technologies. And his background will really serve well in these areas.

Mr. Chairman, I have come here to recommend Dr. Sharma highly to the committee, and ask for his confirmation.

Thank you very much.

Senator EXON. Senator Akaka, thank you very much. The committee appreciates very much your taking the time to come here.

With such distinguished people to introduce him, I am sure that Dr. Sharma's way has been paved very, very well.

We are glad to have insight from both of our colleagues, and thank you for being here. You both are welcome to stay as long as you wish. I see you are shaking hands with him now, which means in the terminology of the House and the Senate, "I have got to go now, but you can stay." [Laughter.]

Mr. MINETA. Sir, if I might correct you, it is really, "You are on your own." [Laughter.]

Senator EXON. Dr. Sharma, as I have indicated earlier, your full statement has been accepted for the record already. I wish that you would proceed in any fashion that you see fit, and then we will have a few questions.

STATEMENT OF DHARMENDRA K. SHARMA, NOMINEE TO BE ADMINISTRATOR, RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

Dr. SHARMA. Thank you, sir. I would, indeed, with your kind permission, summarize my remarks.

Senator EXON. Would you pull the microphone a little closer to you so the people in the back of the room can hear?

Dr. SHARMA. Yes, sir.

Senator EXON. Thank you.

Dr. SHARMA. Mr. Chairman, first of all, I would like to thank Senator Akaka and Congressman Mineta for their kind introductions, and also Senator Wofford, who has provided a statement for the record.

[The prepared statement of Senator Wofford follows:]

PREPARED STATEMENT OF SENATOR WOFFORD

Mr. Chairman, members of the committee, it is with great pleasure that I present testimony today in support of Mr. Dharmendra (Dave) K. Sharma's appointment to the position of Administrator of the Department of Transportation's Research and Special Programs Administration.

Dr. Sharma is a highly trained professional who over the past 30 years has distinguished himself in the fields of energy science and technology as well as public service. Since 1980, Dave has been affiliated with the Electric Power Research Institute, where he directed research on the design and development of electric power generation, transmission, and distribution technologies and systems. Additionally, Dave has served as a congressional fellow and later as a science advisor to Senator Wendell Ford. It was with Senator Ford that he played a key role in the development and passage of the 1992 National Energy Policy Act.

Moreover, Dave's education provides him with a generalist's perspective to broader areas of science and technology. He holds M.S. and Ph.D. degrees in electric power engineering from Rensselaer Polytechnic Institute in Troy, NY, and obtained his bachelor's in technology (with honors) from the Indian Institute of Technology in Kharagpur, India. He also holds an M.S. in electrical engineering from the University of Windsor in Ontario, Canada. Dave is an Institute of Electrical and Electronic Engineers fellow, a registered professional engineer in the State of Massachusetts, and a member of Sigma Xi, Tau Beta Pi, and Eta Kappa Nu professional fraternities.

Those who have worked with Dave credit him with the ability to translate complicated technical information into appropriate language for policy discussions. This innate ability will serve the Transportation Department well, particularly given technology's role in the continuing development of this Nation's transportation policy.

I believe Dave's vast experience with electrification coupled with his expansive knowledge of public policy will prove invaluable to the Department of Transportation in the coming years, and distinctly qualifies him for the position of Administrator of the Research and Special Programs Administration.

Dr. SHARMA. I appreciate their support very much.

I would also like to recognize some special guests who are in the hearing room. With your kind permission, I would like to introduce my wife, Santosh; my son, Niraj; and my father.

I am extremely happy that they have joined me for this very special day for the Sharma family.

Senator EXON. We are very glad that they are here also, Doctor.

Dr. SHARMA. Thank you, sir.

Mr. Chairman, it is a great honor to appear before you for confirmation as the first Senate-confirmed Administrator of the Research and Special Programs Administration, RSPA. The honor is especially important to me because of my background. I came to the United States in 1969 and became a naturalized citizen in 1974. At that time, I could not even have dreamed that one day I would have the privilege of appearing before a U.S. Senate committee for confirmation to a senior position in the executive branch of the Government.

Sir, what makes it even more special is that I am appearing before you on Flag Day. This is indeed a momentous day for me, and I appear before you in all humility and with a sincere desire to serve this great country and this great President.

I deeply appreciate the confidence and trust that the President and Secretary Peña have placed in me. I am well aware of the importance of the position of RSPA Administrator. I believe the position requires an individual with a broad range of technical, research, analytical, and management capabilities. RSPA has a unique mission in the Department of Transportation because the agency handles a tremendous variety of activities, including, as has been said earlier, pipeline safety, hazardous material safety, research and technology, crisis management, and transportation safety and training.

Related to these programs, RSPA has responsibility for two very important transportation technology facilities, the Volpe Center in Cambridge, MA, and the Transportation Safety Institute in Oklahoma City. RSPA has a number of important initiatives underway in its safety programs. Currently, quite visible are RSPA's efforts to address pipeline safety issues as a result of an oilspill in Virginia last year and a natural gas explosion in New Jersey several months ago.

In the technology area, the development of dual-use technologies is very important, Mr. Chairman. RSPA must also be aware of program impacts on the environment, as well as needs of the people we serve. If confirmed as Administrator, I plan to give a high priority to these and other issues during my tenure.

Mr. Chairman, I would like to close my remarks and I would like to express my commitment to working closely with you and the members of this committee to make the diverse missions of RSPA a great success in the coming years. I thank you, sir, for giving me this opportunity to present my qualifications and experience, and I am prepared to respond to any questions you might have, sir.

Thank you.

[The prepared statement, biographical data, and prehearing questions and answers of Dr. Sharma follow:]

PREPARED STATEMENT OF DR. DHARMENDRA "DAVE" K. SHARMA

Mr. Chairman and members of the Committee, it is a great honor to appear before you for confirmation as the first Senate confirmed Administrator of the Research and Special Programs Administration (RSPA).

The honor is especially important to me because of my background. I came to the United States in 1969 and became a naturalized citizen in 1974. At that time, I could not even have dreamt that one day I would have the privilege of appearing before a U.S. Senate committee for confirmation to a senior position in the Executive Branch of Government. This is a momentous day for me, and I appear before

you in all humility and with a sincere desire to serve this great country and this great President. I deeply appreciate the confidence and trust that President Clinton and Transportation Secretary Peña have placed in me.

The RSPA Administrator position requires an individual with a broad range of technical, research, analytical and management abilities. RSPA has a unique mission in the Department of Transportation because the agency handles a tremendous variety of activities including pipeline safety, hazardous materials safety, research and technology, crisis management, transportation safety training and aviation support responsibilities. Related to these programs, RSPA has responsibility for two important transportation technology facilities: the Volpe National Transportation Systems Center in Cambridge, Massachusetts and the Transportation Safety Institute in Oklahoma City.

RSPA has a number of important initiatives underway in its safety programs. Currently quite visible are RSPA's efforts to address pipeline safety issues as a result of an oil spill in Virginia last year and a natural gas explosion in New Jersey several months ago. If confirmed, I will make RSPA's safety responsibilities a focus of mine; not only the administration and enforcement of current hazardous materials transportation and pipeline safety statutes, but also an aggressive approach to improvement where necessary. In the research and technology area, the development of dual-use technologies is very important. It is crucial that we focus both on how these technologies can help RSPA's specific programs and how their development can help United States competitiveness. Of course, it is critical that all RSPA initiatives take into consideration any impacts on the environment. If confirmed as Administrator, I plan to give a high priority to these issues during my tenure. As part of this work, I would look to make sure RSPA is appropriately responsive to customer needs, and that it is making efforts to ensure enrichment and job satisfaction for its employees.

An Administrator of RSPA should be someone who has a strong educational and professional background. Also, the agency would be well served by an Administrator who has worked in the research community, understands technology issues, and can advise the Secretary on a wide range of scientific and technical matters.

I believe I bring considerable and relevant experience to the RSPA Administrator position. I hold a masters and a doctorate in Engineering from Rensselaer Polytechnic Institute (RPI) in Troy, New York; a Bachelor of Technology degree with honors in Electrical Engineering from the Indian Institute of Technology in Kharagpur, India; and, a masters degree in Electrical Engineering from the University of Windsor in Canada. I would also bring to RSPA over 30 years of professional and managerial experience in the energy, science, and technology fields.

My experience includes work in design development, research and delivery of many advanced technology products and I have authored or co-authored over 40 technical papers. The field of education is also very important to me. I taught at San Jose State University in California and was elected to the Board of Education, Morgan Hill Unified School District in Morgan Hill, California, serving two years as its President. I also served as a member of the Santa Clara County Drug Abuse Coordination Commission in California.

In closing, Mr. Chairman, I would like to express my commitment to working closely with you and the members of this committee to successfully meet the many challenges we face in the safety, research, crises management and other programs of RSPA. I would like to thank you for giving me this opportunity to present my qualifications, and I am prepared to respond to any questions you have.

BIOGRAPHICAL DATA

Name: Sharma, Dharmendra Kumar; address: 1200 N. Veitch Street, No. 638, Arlington, VA 22201; business address: 400 Seventh Street, SW, Washington, DC 20590.

Position to which nominated: Administrator, Research and Special Programs Administration; date of nomination: April 14, 1994.

Date of birth: January 9, 1939; place of birth: Khurja, India.

Marital status: Married; full name of spouse: Mrs. Santosh Sharma; names and ages of children: Niraj Sharma, 23.

Education: Indian Institute of Technology, 1954-58, Bachelor of Technology (honors); University of Windsor, Windsor, Ontario, Canada, 1966-68, Master of Applied Science; Rensselaer Polytechnic Institute, Troy, NY, 1969-71, Master of Engineering; and Rensselaer Polytechnic Institute, Troy, NY, 1971-74, Doctor of Engineering.

Employment: 1959–66, Heavy Electricals (India) Ltd., Bhopal, India, Section Engineer; 1966–68, University of Windsor, Windsor, Canada, University Research Assistant and University Computer Operator; summer 1967, Canadian Westinghouse, London, Canada, Summer Employee; 1968–69, St. Clair College, Windsor, Canada, Instructor; 1969–73, General Electric Co., Pittsfield, MA, Design Engineer; 1974–77, General Electric Co., Schenectady, NY, Advance Electrical Engineer; 1977–80, General Electric Co., San Jose, CA, Senior Program Manager; 1979–81, San Jose State Univ., San Jose, CA, Part-time Lecturer; 1980–90, Electric Power Research Institute, Palo Alto, CA, Associate Program Manager; 1991–92, Senator Wendell H. Ford, Washington, DC, Congressional Fellow; and 1993–94, Electric Power Research Institute, Washington, DC, Manager, Technology Liaison.

Government experience: Part-time lecturer at San Jose State University, San Jose, CA. Taught course on Electric Machinery (1979–81). Congressional Fellow in the Office of Senator Wendell H. Ford (D-KY) (1991–92). Member, Board of Education, Morgan Hill Unified School District, Morgan Hill, CA (4/80–11/85). Non-partisan position.

Political affiliations: Contributed \$125 to 1994 Senate campaign of Senator Harris Wofford (D-PA); contributed \$100 to 1994 congressional campaign in Maryland of Mr. Neil Dhillon.

Memberships: Fellow, Institute of Electrical and Electronics Engineers (IEEE); Member, IEEE Metric Policy Committee; Chairman, Public Affairs Council, IEEE Power Engineering Society; Division VII Representative, IEEE-USA Energy Policy Committee; Professional Engineer, Commonwealth of Massachusetts; Member, International Conference on Large High-Voltage Electric Systems (CIGRE); Member, CIGRE Working Group 37-13 (communication between energy decision makers and electric power system planners on environmental matters); President, Board of Education, Morgan Hill Unified School District, Morgan Hill, California; Member, Santa Clara County Drug Abuse Coordination Commission, San Jose, California; Member, EPRI EEO/AAP Advisory Task Force; Resident Associate, Smithsonian Institution, Washington, DC; Gandhi Memorial Library, Mahatma Gandhi Memorial Center, Washington, DC; Arya Samaj Foundation of North America, Rockville, MD (A religious organization that meets periodically to study and recite Hindu religious scriptures such as Vedas); The Asia Society, Washington, DC; The India Council, Washington, DC; Folger Shakespeare Library, Washington, DC; Colonial Williamsburg Foundation, Williamsburg, VA; and Member, American Association of Retired Persons.

Honors and awards: Member, Sigma Xi; Member, Tau Beta Pi; Member, Eta Kappa Nu; and Recipient of many performance recognition awards at Electric Power Research Institute and GE.

Published writings: May be found in the committee files.

QUESTIONS ASKED BY THE MAJORITY AND ANSWERS THERETO BY MR. SHARMA

Question. How have your experiences as an engineer over the past two decades prepared you for the responsibilities as the Administrator of the Research and Special Programs Administration, and how will you use this expertise to perform the duties of this position, if confirmed?

Answer. The experiences that I have gained over the last two decades have given me the opportunity to understand, provide team leadership and work through extremely technical issues. If I am confirmed, I will apply my knowledge to the areas of pipeline safety and the safe transportation of hazardous materials. As you know, both these fields are extremely complex in terms of the evolving technologies that are currently being used by the industry. For example, in pipeline safety, devices called "smart pigs" are used to internally inspect pipelines and in the transportation of hazardous materials global positioning systems are being used to track hazardous materials shipments.

Additionally, my technical experience in the fields of energy, science and technology will be extremely useful in dealing with the various subject matters that the Volpe National Transportation Systems Center in Cambridge, Massachusetts routinely deals with in transportation research.

I believe that my background will support the goals and initiatives of both President Clinton and Secretary Peña in helping to create a new alliance between the nation's transportation and technology industries, to make them both more efficient and internationally competitive and create a high technology transportation industry and infrastructure for the 21st century.

Question. What do you believe are the major problem areas in the transportation of hazardous materials and pipeline safety, and those most in need of attention?

Answer. Areas most in need of attention in the transportation of hazardous materials include:

- Implementing NAFTA;
- Protecting the environment from the releases of hazardous materials; and
- Harmonizing, streamlining and reducing federal regulations governing hazardous materials.

For pipeline safety, the areas most in need of attention include:

- Improving damage prevention through more and better one-call systems;
- Increasing knowledge of the nature and condition of the infrastructure—for prevention, monitoring, and mitigation;
- Fully funding the state grant program; stops unfunded mandates; leverages federal resources; and
- Improving technical skill mix; need more knowledge in materials, non-destructive evaluation, environmental engineering.

Question. Is there a particular area within RSPA's jurisdiction on which you will concentrate your attention, if confirmed?

Answer. RSPA can be proud of its recent work in many areas. I believe it has responded admirably and proven itself on issues related to hazardous materials transportation and pipeline safety. It has always been on the front line when there is a cross-modal transportation emergency. Both the Volpe National Transportation Systems Center and the Transportation Safety Institute have also made significant contributions on many fronts.

However, I recognize that there is a need for reinforcement in certain areas. Though RSPA has accomplished a great deal recently, one of my major initiatives, if confirmed, will be to secure additional resources in programs receiving significant new emphasis. A current example is RSPA's pipeline safety program. I would want RSPA to continue to look at ways it can streamline programs and provide the best service to its customers, but I also must ensure that RSPA's mission is accomplished. This is a major challenge that RSPA faces and it will be my responsibility to see that RSPA performs even better in the coming years.

Beyond general program improvements, I plan to assist Secretary Peña in the area of transportation technology leadership. As you know, President Clinton has announced his intent to make technology development a cornerstone of his plan for the future. In the Secretary's Strategic Plan for DOT, one of his goals is to accelerate technological advances to make our transportation systems more efficient, environmentally sound, and safe. I will work closely with Secretary Peña and direct my efforts towards meeting those goals as stated in his Strategic Plan.

Question. What do you believe should be done in order to strengthen communications to and from operators of underground facilities (including pipelines) to prevent damage or ruptures to such facilities?

Answer. Several actions are needed to strengthen communications to and from operators of underground facilities to prevent damage or ruptures to such facilities. The most important actions are:

- Public Service Announcements and training sessions should be conducted by joint groups of operators and excavators.
- RSPA should interact with one-call leadership to ensure support for critical initiatives.
- RSPA should work with interested parties to coordinate overall efforts to improve one-call systems—including trade associations such as American Gas Association and American Petroleum Institute, state pipeline safety program managers and others.
- All underground utilities should participate in one-call damage prevention notification programs. These systems allow accurate and timely marking of underground facilities and may avoid damage at the time of excavation, or possibly years later following fatigue that might have occurred if one-call had not been used.
- All pipeline operators need to belong; the pipeline industry is very committed to the one-call concept.
- Pipeline operators should patrol their lines frequently to spot construction activity that could damage lines.

Question. What elements, in your opinion, are required to develop and maintain a creditable "one-call" system for tracking underground facilities and alerting citizens to their existence?

Answer. There are five major elements in a model one-call program:

- 1) Mandatory participation by all owners and operators of underground facilities including governmental units.
- 2) No exceptions for any class or type of excavator notifying before commencing excavation.

3) Effective and easily enforced sanctions. Penalties for failure to use the one-call system should be sufficient to deter violations and encourage participation. An administrative system with built-in appeals processes and modest civil penalties is one way to achieve this objective.

4) Strong public awareness programs. The public, including citizens and excavators, must be informed of the law and of the proper procedures for marking facilities and conducting excavations. Public Service Announcements and training sessions conducted by joint groups of operators and excavators have proven effective.

5) Total state-wide coverage. All areas of a state must be covered by a single one-call center having the capability to respond 24 hours a day.

Question. What role should RSPA play in the development of a "one-call" system?

Answer. RSPA announced Secretary Peña's Action Plan in November 1993 to improve environmental protection from the risks posed by oil pipelines. This plan, the result of a comprehensive review of the pipeline safety program ordered by DOT Secretary Peña, followed a March 1993 pipeline rupture spilling diesel fuel into a tributary of the Potomac River.

A key component of the Action Plan is a National Campaign to encourage states to adopt improved one-call centralized notification systems to locate and mark underground utilities, including pipelines.

Under this Campaign, RSPA is:

- Working with selected states not having one-call legislation or needing to strengthen legislation where there is a strong likelihood to effect some improvement.
- Describing exemplary practices and success stories in one-call systems for dissemination.
- Analyzing national and state accident statistics to determine extent of excavation damage as an accident cause and document any reduction in accidents that can be attributed to expanded use of one-call systems.
- Developing a two-hour course on one-call compliance and enforcement for training state pipeline safety inspectors.
- Participating in the development of a national computerized mapping system, allowing excavators and underground utility operators to better coordinate their operations.

Question. Have you any thoughts on what, if any, actions you will take immediately, if confirmed, in order to assess the magnitude of the problem of pipeline safety.

Answer. My first priority will be to learn the program: how it operates, its strengths and weaknesses. I will address the following:

- Direct a comprehensive investigation of elements of the infrastructure to determine the risks of pipeline failure—the causes, probabilities, and consequences in specific geological locations.
- Prioritize development of solutions and regulatory applications based on risks.
- Develop a strategy in response to findings about the impact on pipelines of encroaching development and land use practices.
- Charge the Office of Pipeline Safety to retrospectively review and cleanup the accident data base to analyze trends in accident and release causes.
- Finalize a national risk assessment model.
- Support a national mapping program to provide a detailed decision framework for regulatory, economic, environmental and emergency planning applications.
- Establish partnerships with industry and states to look at their risk assessment practices and targeting of resources, working toward a new standard of risk management.
- Sponsor thorough investigation of the quality and extent of research into:
 - 1) Non-destructive evaluation techniques to detect flaws before they grow to failure—particularly OPS's access to latest technologies, and
 - 2) Technologies available to precisely monitor pipelines.

Question. Please provide the Committee with an overview of the issues you believe are important to helping ensure safety in the transportation of hazardous materials.

Answer. RSPA is faced with a multitude of issues regarding hazardous materials transportation. They include:

- NAFTA—working with Mexican and Canadian government officials to harmonize hazardous materials transportation requirements to expedite safe cross-border transportation.
- Extending the Hazardous Materials Regulations to intrastate transportation to ensure a nationally uniform and safe multi-modal transportation system;
- Environmental issues—working with other Federal regulators to streamline and harmonize various agency regulations to both strengthen environmental protec-

tion, and at the same time, reduce regulatory confusion and unnecessary burdens; and

- Improving hazardous materials identification systems including adopting cost effective improvements in marking, labeling, and vehicle placarding.

Question. How should RSPA judge the safety and reliability of the packaging used to transport hazardous materials? What factors, in your opinion, should be considered in that regard?

Answer. The safety and reliability of the packagings used to transport hazardous materials should be viewed as part of an overall risk management system. Greater emphasis should be placed on the transportation of those materials which present the greatest risk to the American public.

The integrity of a hazardous materials packaging should be commensurate with the level of risk associated with the material being offered for transportation. For most packagings, this can be based on their ability to pass specified performance standards.

Review and analysis of packaging failures and successes based on reports of incidents, or lack thereof, are important factors in the determination of a packaging's reliability. In addition, an extensive enforcement program is essential to maintaining the performance of the system at a high level.

Question. The Committee is committed to maintaining the safe transportation of hazardous materials throughout the nation. What initiatives and efforts in this area would you support?

Answer. As RSPA's Administrator, I would take a lead role in implementing the Secretary's Strategic Plan goal to improve the safe transportation of hazardous materials on our air, water, surface and pipeline transportation network. In addition, ensuring the effective harmonization of hazardous materials regulations internationally is extremely important to the success of the North American Free Trade Agreement (NAFTA) and to our very positive balance of trade in chemicals. NAFTA provides a unique opportunity to further facilitate such trade.

There are exciting possibilities in the area of hazardous materials to support the Administration's policy of converting defense technologies to commercial applications. Based on my experience in the private sector, I would be strongly supportive of using these new technologies and innovations to improve safety and efficiency.

Increasingly, RSPA has been devoting significant effort to environmental issues, such as developing regulations for the safe transportation of marine pollutants and oils, chairing a National Response Team task force on Federal control of hazardous materials, and extensively coordinating with other agencies, both domestic and international, on environmental issues. I support these efforts and will continue to work with other Federal regulators to streamline and harmonize various agency regulations to both strengthen environmental protection, and at the same time, reduce regulatory confusion and burden on the private sector.

Senator EXON. Doctor, thank you very, very much. The brevity of your opening statement has had a very positive effect on the committee. [Laughter.]

Dr. SHARMA. Sir, I heard you say 3 o'clock, so I am here to answer any questions that you might have.

Senator EXON. Thank you. I have a few questions. The ranking member of the subcommittee has arrived, and I would like to recognize Senator Hutchison at this time for any opening statement that she might wish to make or questions to ask.

Senator HUTCHISON. I have no opening statement. We are very glad to have you here.

Dr. SHARMA. Thank you, Senator.

Senator EXON. Thank you, Senator.

There will be some additional questions for the record for which we will not have time in this public hearing, but we would ask that you respond as promptly as you can to those for inclusion in the record, Doctor.

Dr. SHARMA. I would be glad to do that, sir.

Senator EXON. Let me start out with something that you touched on—the 1990 hazmat law. Congress authorized funds in that law for an emergency preparedness grant program to train police, fire,

and other emergency personnel in responding to hazardous material transportation accidents. This program was to be paid for with fees collected by RSPA from the industry.

As I understand it, it generally has worked quite well. But I do understand—and correct me if I am wrong—that RSPA failed to collect all of the fees. Therefore, States were allocated some 30 percent less funds than was authorized. If confirmed, will RSPA collect sufficient fees to fully fund this program in the future?

Dr. SHARMA. Sir, that is correct. So far, the States have been getting about 70 percent of what the States should get. If confirmed, Senator, I would indeed look into the details of why the full funding is not being collected and make all efforts to see that we collect the necessary funds to fully fund the State programs. It is very important that the States get the money for training and other features so that they are prepared for an emergency hazmat program.

Senator EXON. Doctor, thank you very much. I am glad to hear you say that. The hazmat law is designed primarily for the protection of the public from spills of hazardous material.

Dr. SHARMA. Yes, sir.

Senator EXON. It also is designed to train the first people at the scene of the accident, so to speak, the firemen, the police, and others, who have approached these problems in the past without proper training, the do's and don'ts of the various situations, and better identification of what hazardous material is. We have a long way to go on that yet, so I am glad to see your devotion to it.

My next question has to do with the Sanitary Food Transportation Act with which I hope you are somewhat familiar. As you may know, I had a great deal to do with the Sanitary Food Transportation Act. I understand that in fiscal year 1995, the administration is considering a proposal to eliminate five positions in RSPA which are necessary to implement the Sanitary Food Transportation Act.

Now, those of us who have something to do with passing legislation which we think is very important are always supportive of reducing the number of personnel in other people's laws and other people's programs. That is not the case with this one.

So, with that caveat and with my admission that I consider this a high priority, could you explain how the administration proposes to comply with the law and its implementation in the future with what appears to be a substantial reduction in personnel necessary to carry out the act?

Dr. SHARMA. Sir, I am generally aware of the problem you describe—the SFTA issue. Let me first say, Mr. Chairman, that Secretary Peña and I are absolutely, like all of us, totally committed to safe and sanitary food transportation. Now, under this environment that we have today of NPR, the national performance review; do more for less resources, staffing and all of that, the question, sir, basically is: How do we do the sanitary transportation of food in the most cost-effective manner? That is the basic question.

Let me just say that I have been following what is going on in this area. I have not been involved in any meetings or deliberations or decisions. As you know, sir, there are three agencies involved in this—the Department of Transportation, the Food and Drug Administration, and the Department of Agriculture.

The question, therefore, is: What is the most cost-effective way of achieving this objective? How much should the Department of Transportation be involved in this and the other two Departments that I mentioned?

Let me assure you, sir, that once I am confirmed by the Senate, this will be a top priority item for me—the resolution of this issue—on what these individual agencies contribute to the resolution of this problem. You have my commitment on that, and it will have my highest priority.

Senator EXON. Doctor, thank you.

I just have one last question for the record today, but, as I indicated earlier, there will be a few more to which I would like you to respond in writing for the record.

Dr. SHARMA. I will be glad to do that, sir.

Senator EXON. My last question, again, has to do with hazardous materials. The committee has received comments which indicate that, in the past, funds specifically intended for hazmat programs were placed in other RSPA programs. Can you assure the committee that hazmat funds will be used in the future for hazmat programs as intended?

Dr. SHARMA. Sir, the answer is yes. That is true, sir.

Let me just point out that hazmat is a very well run program within RSPA. It would be my intention to have it do an even better job. In anything we do, sir, as you know, there is always hope for improvement. But let me, for the record, say that hazardous materials program in RSPA is doing a very good job. And, yes, sir, the funds that the Congress allocates for hazmat will indeed be used for that purpose. And I look forward to working with you and your staff and the committee in that area.

Senator EXON. Thank you, Doctor. Thank you very much.

Senator Hutchison.

Senator HUTCHISON. Let me just ask you this. I believe that we are probably at the very beginning of the use of technology for safety measures. I think we have not even begun to scratch the surface yet. What would be your first priority as you come into office for using the new technological advances we have for the safety areas in your position?

Dr. SHARMA. Senator, I am glad you asked that question. We have to use the latest technology—let there be no question about it—so that we can indeed meet the safety mandate in the programs in RSPA—the pipeline safety programs and the hazardous material program, the hazmat programs.

In the pipeline safety program, for example, the use of sensors and the use of remote inspection devices—what they call smart pigs in pipelines. It is very important that we use the best technology there to have the best inspection devices to see that indeed there are no defects in the pipeline, to see if there is corrosion or cracks that they are detected.

And that is also true, Mr. Chairman, in the area of hazmat and all of the programs that RSPA is responsible for.

Senator, let me assure you that we will use the latest technology for those safety programs and any other thing we do in this administration.

Senator HUTCHISON. I think we are going into a hearing in just a few minutes on rail safety.

Dr. SHARMA. Yes, Senator.

Senator HUTCHISON. The use of technology and sensors I think is going to be the new innovation to prevent many of the railroad crossing accidents that we are looking at. When I was on the National Transportation Safety Board, so much of what we did, particularly in hazmat and pipeline safety, was really communications and making sure that people know how to deal with it and what the hazardous material is when it comes and how to protect yourself from it. But now we really do have technology that can go much more into prevention.

Certainly, I will say, with your background, you are going to be in a great position to be a leader for the technological advances. I have every confidence that you will be able to do that, and I certainly support your nomination.

Dr. SHARMA. Thank you, Senator.

Senator EXON. Thank you, Senator Hutchison.

Senator Danforth.

Senator DANFORTH. I have no questions.

Senator EXON. Doctor, thank you very much for your testimony. And I certainly will pledge my full support. I know of no problems. We will try to move this ahead as quickly as possible and get you confirmed not only by the committee but the full Senate at the earliest possible date.

Thank you for being here and we look forward to working with you, sir.

Dr. SHARMA. Thank you, Mr. Chairman.

Senator EXON. Thank you.

[Whereupon, at 3 p.m., the hearing was adjourned.]

APPENDIX

POSTHEARING QUESTIONS ASKED BY SENATOR BREAUX AND ANSWERS THERETO BY DR. SHARMA

Question. Over the years, a number of DOT regulations have required animal testing for purposes of identifying and classifying hazardous materials. In light of recent scientific advances with regard to alternatives to animal testing, what steps do you plan to take to promote such alternatives?

Answer. The Research and Special Programs Administration (RSPA) has a long history of supporting the reduction of animal tests and encouraging the development of nonanimal test methods for identification and classification of hazardous materials. Currently, of the nine classes of hazardous materials, the hazardous materials regulations require animal tests for only two classes: Class 8, corrosive and Class 6, poison.

I am pleased to report that on April 28, 1993, RSPA issued an exemption DOT E-10904 to In Vitro International, Inc. for their CORROSITEX in vitro (out-of-body) nonanimal corrosivity test as an alternative to skin corrosivity testing of animals. To the best of our knowledge, DOT E-10904 is the first adoption by a Federal agency of an in vitro test as an alternative to testing for regulatory purposes. For a number of chemical groups, this exemption authorizes use of the CORROSITEX test for determining the classification and packing group of materials corrosive to skin. Any shipper may use CORROSITEX provided all terms of DOT E-10904 are followed. In addition, RSPA currently has under evaluation an exemption application from Advanced Tissue Sciences (ATS) for a different in vitro test for skin corrosive materials. ATS's Skin² test for determining the classification and packing group of materials corrosive to skin uses cultured human skin as a test sample. A third company with an in vitro corrosivity test under development has expressed to RSPA its intent to seek a DOT exemption. This third company also uses cultured human skin as a test sample.

Unfortunately, for poisons nonanimal tests are not available. However, RSPA has done much to minimize animal testing for classification of poisons. The hazardous materials regulations allow the use of previously collected data and calculation of toxicity values from existing data of different exposure times and concentrations. This eliminates, except for newly developed chemicals, the need for animal tests to classify most chemicals. Even when animal tests must be performed because no toxicity data exist, RSPA allows the use of threshold or limit tests which require the test of only 10 rats.

RSPA believes that the use of animal testing to establish that a material is a poison or corrosive, and thus, subject to our transportation safety regulations is warranted by the contribution of those regulations to the protection of the public. However, as our approval of in vitro testing for corrosive materials and use of existing data, limit tests and calculation of toxicity demonstrates, RSPA will use any reliable alternative method that would spare animals.

Question. Education and enforcement of the hazardous materials classification regulations has the potential to improve public health and safety. What steps do you plan to take to make enforcement of the classification regulations a priority within RSPA?

Answer. RSPA, as well as FHWA, FAA, FRA and the Coast Guard, conduct a uniform and comprehensive outreach and enforcement program to ensure that shippers and carriers comply with the Hazardous Materials Regulations. As a part of the Secretary's Strategic Plan, the Coast Guard began a nationwide hazmat freight container inspection program and FAA initiated development of a revised cargo security inspection program which include hazardous materials and which targets air freight forwarders. Monitoring for proper classification of hazardous materials as part of compliance inspections is included in the hazardous materials enforcement program.

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Question. When the members of the medical profession handle blood, tissue samples, and medical waste, they are instructed to handle the materials as if it were dangerous and infectious. The committee is concerned that the transportation of blood, tissue samples, and medical and biological waste could pose risks to transportation workers. The Research and Special Programs Administration has the responsibility for packaging standards for this type of material. Should the Nation's transportation workers receive the same standard of protection when knowingly or unknowingly handling medical and biological materials as recommended for medical professional and nonprofessional workers?

Answer. RSPA totally agrees that transport workers should be adequately protected against exposure to infectious diseases as a result of transporting infectious materials. While in the workplace, employees are protected in accordance with OSHA requirements under 29 CFR 1910.1030. DOT has regulations in place for the transportation of materials known or suspected to contain an etiologic agent/infectious substance and their wastes. These materials must be packaged in high integrity packagings and meet hazard communication requirements. It is the opinion of this agency that sufficient packaging and hazard communication provides transport workers adequate protection from the risks posed by infectious waste. However, RSPA is in the process of resolving several issues raised by commenters and petitioners challenging the requirements for infectious substances and regulated medical waste scheduled to go into effect on October 1, 1994. A notice is under development to address these issues.

Question. In response to the tragic pipeline accident in Edison, NJ, Secretary Peña has asked for additional funding for the Office of Pipeline Safety. A part of this additional funding would be used to map existing pipelines. The committee is concerned that there are a number of "mapping" efforts across the Government with little coordination or cooperation. There is a potential for expensive duplication of effort. Please provide the committee with an overview of this mapping project, and what efforts, if any, are being taken to assure prudence and efficiency.

Answer. The additional funding requested for the national pipeline mapping project will be used to obtain data from pipeline operators and other sources on the geographic location of pipelines and their main characteristics. The Office of Pipeline Safety (OPS) will use a portion of the funds to implement a pilot project by choosing a test area for the implementation of the program, and evaluating the results of the pilot project.

The remaining funds will be used to reimburse organizations, such as State agencies and universities, for data gathering and for digitizing the location information. RSPA will work closely with the U.S. Geological Survey, State agencies, universities, and the pipeline industry to obtain accurate information. The Office of Pipeline Safety will work in partnership with the U.S. Geological Survey, that can appropriate money to these sources, through a reimbursable agreement, to obtain the desired information.

The OPS will coordinate work with the U.S. Geological Survey, the Department of Energy, the Department of Commerce, the Department of the Interior, the Environmental Protection Agency, the Federal Energy Regulatory Commission, the Federal Emergency Management Agency, and State agencies to preclude duplication of effort and assure efficiency in this mapping effort. The OPS will use the information already available from Federal and State government agencies, and then add or improve the data and provide back to the Federal or State agency when the project is completed.

POSTHEARING QUESTIONS ASKED BY SENATOR HUTCHISON AND ANSWERS THERETO BY
DR. SHARMA

Question. You've asked for over \$37 million in funding this year, practically doubling what was appropriated in FY 1993. Are you going to be able to spend this money well? How are you going to avoid waste and duplication?

Answer. The resources requested are commensurate with the tasks that are instrumental in implementing the Secretary's vision of what the pipeline safety program should be now and in the future. Significant improvements are needed for the program to carry out its mission of credibly and authoritatively assessing the integrity of the pipeline infrastructure and taking actions to address apparent risks to people and the environment.

RSPA coordinates its program development work with several Federal agencies, its 50 State partners, and as appropriate, with organizations representing the industry we regulate. This coordination is focused on achieving optimum program targeting for maximum efficiency.

We plan to spend the money on the following essential initiatives:

- \$1.4 million will provide for needed personnel to help with program management, improve our ability to inspect pipelines on a more timely basis, and to support technical and regulatory activities.
- \$4.5 million for contracted engineering firm doubles our technical field capability to inspect pipelines and investigate failures.
- \$1 million for studies on critical issues arising out of recent accidents, including population encroachment and land use.
- \$1 million for studies supporting regulatory actions mandated by the Pipeline Safety Act of 1992 (PSA 92).
- \$4 million for grants to States for reimbursing up to 50 percent of the State costs incurred in carrying out their pipeline safety programs.
- \$1.2 million to begin a national pipeline mapping program.
- \$2.1 million to develop alternative nondestructive diagnostic technologies for pipeline components and materials.
- \$1.0 million to enhance data analysis capability to analyze data on the pipeline inventory and determine failure trends.

Question. The Department of Energy has an energy facility mapping program through the Argonne labs. The Department of Defense has responsibility for certain types of mapping and the Geological Survey is another agency with a national mapping program. Why do you need \$1.2 million in order to start another mapping project? Is there not a duplication of efforts here?

Answer. The Department of Energy has limited information on the location of natural gas and hazardous liquid pipelines. The locational information that they have is not sufficiently accurate to locate the pipelines. This locational information could place the pipeline several miles from where it is actually located. The OPS plans to use the information already available from the Department of Energy, improve the locational accuracy, and provide the improved locational information back to the Department of Energy when completed.

The U.S. Geological Survey has small sections of pipeline digitized at an appropriate scale. However, these sections of digitized pipeline do not identify the type of pipeline (i.e., water pipeline, sewage pipeline, hazardous liquid pipeline, natural gas pipeline, etc.). The OPS plans to use the information available from the U.S. Geological Survey, adding the missing sections of pipeline and information on the type of pipeline, and providing the improved locational information back to the U.S. Geological Survey when completed.

Question. The pipeline industry is presently spending millions of dollars in research and development. Over \$20 million in the next 3 years will be spent in developing new technologies including enhanced leak detection, smart pigging, and other technologies that will detect weakness in pipes. The industry is making a great effort to find technologies that will improve both the safety and efficiency of their lines. How will DOT sponsored, industry-funded efforts make a difference?

Answer. RSPA's investigation and oversight of pipelines involved in recent major incidents revealed a lack of capability in the industry and in Government to effectively detect early flaws in pipelines before they grow to failure. Improving diagnostic and monitoring tools such as pigging and acoustic listening systems are essential to meeting our prevention mission.

While industry's redoubling of efforts in this area are commendable, we believe it is essential that the Government play a role in the development and monitoring of these efforts to be assured of direct access to recent findings. The focus of these efforts may not be adequate for our regulatory purposes in establishing performance criteria for specific measures that are practical. Further, to date, industry has not



volunteered its research findings. We believe that this control of information has occurred to prevent the Government from taking regulatory action.

To be effective as a credible, independent technical overseer of industry practices, we need to have our own first-hand involvement in research and development programs. This is critical if we are to be knowledgeable of, and avail ourselves of, the latest technology for assessing the safety of pipeline operations either before or after an accident. The Government must be as technically competent as the private sector.

The outcome of this work, leading to the alternative nondestructive monitoring techniques, is thoroughly consistent with parallel efforts in other modal administrations and may lead to findings that benefit other agencies in the Department.

Question. When we initially approved pipeline user fees to fund OPS, concern was expressed that we needed to continue strong oversight of budget proposals to assure that the program did not mushroom because its funding did not come from taxpayer dollars. With this new request, the user fees of both natural gas and liquid pipelines increase significantly. Both have to compete for markets with other fuels. Is all of your budget request necessary? Can any of the programs be funded by means other than user fees?

Answer. We believe that the initiatives outlined above are vital to assuring adequate oversight of the Nation's pipelines, and that we must address vulnerabilities in this infrastructure that have surfaced in recent accidents. Extensive work is ahead of us in defining the extent of these vulnerabilities.

As to other funding sources, we are drawing from the Oil Spill Liability Trust Fund \$2.5 million for activities pertaining to review and approval of hazardous liquid operators response plans, related data analysis, and information exchange activities which benefit our base program. We are working with the U.S. Geological Survey, the Department of Energy, and Federal Energy Regulatory Commission to share program costs for the national mapping system. Further, we are exploring potential funding sources within the Department of Defense for development of research initiatives which would benefit both pipelines and defense applications.

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